

### **REMARKS**

Applicants thank the examiner for the courtesies extended to the undersigned during the telephone interview conducted January 11, 2005.

During the interview the examiner indicated all the claim rejections under 35 U.S.C. §§112 and 102(b), and most of the rejections under 35 U.S.C. §103(a) in the Office Action dated September 2, 2004 were overcome by the proposed amendment submitted for purposes of the interview. Those amended claims have been reproduced hereinabove with the exception that certain withdrawn claims are canceled per the suggestion of the examiner to expedite issuance of a Notice of Allowance. During the interview the examiner further noted the only claim rejections that remained to be addressed are the rejections under 35 U.S.C. §103(a) over Bieri in view of Patton. Also during the interview, the examiner indicated the Applicants' arguments that there is no motivation to combine the teachings of Patton with those of Bieri were persuasive, and the examiner requested the Applicants include those arguments in this response. The arguments appear below.

Claims 1-32 and 51-86 are pending in the application. Claims 3-6, 8-9, 11-30, 32-51, 54-59, 61-62, 64-83 and 85 are canceled. Claims 1-3, 6-11, 15-19, 31, 32, 51-56, 59-64, 68-70, 72 and 84-86 stand rejected. By the foregoing amendment the Applicants have amended claims 1, 2, 10, 52, 60, 63, 84 and 86. In view of the foregoing amendment, the telephone interview wherein it was indicated the only remaining issues to be resolved are the rejections under 35 U.S.C. §103(a) over Bieri in view of Patton, and the following discussion, Applicants submit that all claims are in condition for allowance.

### **CLAIM REJECTIONS**

#### **35 U.S.C. § 103**

##### **Claims 1-3, 6-11, 15-19, and 31-32**

In the Office Action on page 27, paragraphs 29, claims 1-3, 6-11, 15-19, and 31-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bieri et al.* and *Patton* ("Patton"). Applicants respectfully traverse this rejection. Independent claim 1 as amended requires and claims an array comprising a plurality of biological membrane microspots comprising G-protein coupled receptor stably associated with a surface of a glass substrate, the surface of the substrate

comprising a  $\gamma$ -aminopropyl-silane coating. Applicants submit that neither *Bieri et al.* nor *Patton*, alone or in combination, teach or suggest the present invention as claimed. Moreover, Applicants submit the Examiner has not provided adequate reasons why there is a motivation to combine the references and why such a combination would have rendered the claimed subject matter unpatentable under 35 U.S.C. § 103. M.P.E.P. § 2142.

*Bieri et al.* disclose an array of micropatterned mobilization of a G-protein coupled receptor and a method of detecting G-protein activation, the array consisting of gold surface sensed chip and G-protein coupled receptors. The surface is treated with  $\omega$ -hydroxy-undecanethiol and biotinylated-thiol moieties. *Bieri et al.* do not disclose, teach, or suggest an array comprising a plurality of biological membrane microspots comprising G-protein coupled receptor stably associated with the surface of a glass substrate, the substrate comprising a  $\gamma$ -aminopropyl-silane coating. As such, the teachings of *Bieri et al.* would not motivate one skilled in the art to look to *Patton* since the clear teaching of *Bieri et al.* is to employ a gold surface sensed chip wherein the surface is treated with  $\omega$ -hydroxy-undecanethiol and biotinylated-thiol moieties. Indeed, *Bieri et al.* teach away from use of a  $\gamma$ -aminopropyl-silane coating in association with a G-protein receptor. A prior art reference may be considered to teach away when a person of ordinary skill upon reading the reference would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. *Monarch Knitting Machine Corp. v. Fukuhara Industries and Trading Co.*, 139 F.3d 977 (Fed. Cir. 1998). As a result of the teaching away of *Bieri et al.* there would have been no motivation for a skilled artisan to combine *Bieri et al.* with *Patton* in order to achieve the combination suggested by the Examiner (which combination is in any event not the invention of the subject application, as is discussed in more detail below). *In re Pavlecka*, 137 U.S.P.Q. 555, 557 (C.C.P.A. 1963).

Moreover, the mere fact that the prior art could be modified as proposed by the Examiner is not sufficient to establish a *prima facie* case of obviousness. *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). The Examiner must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. *Id.* Here, the Examiner has failed to cite evidence from the prior art that the suggestion to modify the cited references exists, or, as stated above, would even work. M.P.E.P. § 2142. Applicants submit that the motivation relied

upon by the Examiner comes from the Applicants' own description of their invention in the specification rather than coming from the applied prior art, and that therefore, the Examiner has employed impermissible hindsight in rejecting the claims. *See, W.L. Gore and Associates v. Garlock Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983).

In addition, *Bieri et al.* fail to teach or suggest an array of membrane microspots that does not desorb from the substrate when drawn through an air-water interface. The *Bieri et al.* reference discusses performing assays using surface plasmon resonance (SPR) in a flow through assay format, meaning the membrane sample remains immersed in a liquid (page 1107, column 2, second full paragraph of the *Bieri et al.*). The experimental protocol section of the *Bieri et al.* reference makes clear that the membrane patterns were processed in cuvettes diluted in buffer solution (page 1108, first column, third full paragraph). *Bieri et al.* state that measurements were performed in a stirred cuvette, again making clear that the membrane patterns were only stable if and when kept in solution (page 1108, first column, fourth full paragraph). Therefore, the *Bieri et al.* reference fails to teach an array of membrane microspots that do not desorb from the substrate when drawn through an air-water interface, because the substrate must remain immersed in a solution during formation of the striped patterns and during measurement. Nothing in *Patton* even remotely suggests stably associated arrays can be achieved by use of compositions disclosed therein. Accordingly, *Patton* does not remedy the deficiency in *Bieri et al.*, namely, the failure of microspots to remain adsorbed when drawn through an air-water interface. The deficiencies of the combined teachings of *Bieri et al.* in view of *Patton* were discussed at length in previously submitted amendments and are reiterated here. In addition, *Patton* discloses a laundry list of proposed compounds and compositions that may or may not work under given conditions. The Examiner has engaged in hindsight reconstruction by picking and choosing teachings of the *Patton* to combine with *Bieri et al.* after the benefit of reading the instant application. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988). In this respect, the rejection is an "obvious-to-try" rejection, which is improper. *In re Roemer*, 258 F.3d 1303 (Fed. Cir. 2001). The Applicants submit the subject claims are not obvious in view of the cited references. Claims 2, 7, and 31 depend from claim 1 and recite additional features therefor. Thus, these dependent claims are also not obvious and are allowable. Applicants have canceled claims 3, 6, 8, 9, 11, 15-19, and 32. Thus Applicants submit that claims 1, 2, 7, 10, and 31 are

patentable over *Bieri et al.* in view of *Patton*. Accordingly, Applicants respectfully request this rejection be withdrawn.

Claims 54-56, 59-64, 68-70, 72, and 84-85

In the Office Action on page 35, paragraph 32, claims 54-56, 59-64, 68-70, 72, and 84-85 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bieri et al.* and *Patton*. Claims 54-56, 59, 61-62, 64, 68-70, 72, and 85 are canceled. Claims 60, 63, and 84 have been amended to depend from independent claim 52. Claim 52 as amended recites an array comprising a plurality of biological membrane microspots comprising G-receptor protein associated with the surface of a substrate, said substrate comprising glass wherein the surface of the substrate is coated with  $\gamma$ -aminopropyl-silane such that the array is capable of being produced, used, or stored in an environment exposed to air under ambient humidity. The Applicants reiterate and incorporate by reference in full their previous arguments hereinabove and in earlier Office Actions regarding the shortcomings of *Bieri et al.* Based on those shortcomings, *i.e.*, the lack of  $\gamma$ -aminopropyl-silane coating on a glass substrate or an array composition that is capable of being produced, used or stored in an environment exposed to air under ambient humidity, a skilled artisan would not be motivated, looking at the *Bieri et al.* reference to look to *Patton*, which does not disclose any structures capable of being produced, used, or stored in the environment disclosed in claim 52. The remaining uncanceled claims, *i.e.*, 60, 63, and 84 depend on amended independent claim 52. Accordingly, Applicants respectfully request this rejection be withdrawn.

Claim 86

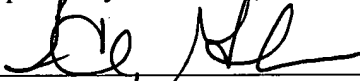
In the Office Action on page 41, paragraph 34, claim 86 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bieri et al.* and *Patton*. Applicants respectfully traverse this rejection. Independent claim 86 as amended requires and claims an array comprising a plurality of biological membrane microspots stably associated with a surface of a glass substrate, the membrane microspots having the ability to bind to a ligand after exposure to air under ambient humidity, wherein the surface is coated with a  $\gamma$ -aminopropyl-silane and the biological membrane microspots comprise a G-protein coupled receptor. Applicants reiterate and

incorporate by reference in full the arguments set forth hereinabove and submit that neither *Bieri et al.* nor *Patton*, alone or in combination, teach or suggest the present invention as claimed. Applicants submit claim 86 is patentable over *Bieri et al.* and *Patton*, and request this rejection be withdrawn.

Applicants submit that all claims pending in the patent application are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited. A petition for a two-month extension of time and fee therefor is enclosed herewith. In the event there are any fees due and owing in connection with this matter, please charge same to our Deposit Account No. 11-0223.

Dated: January 12, 2005

Respectfully submitted,

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